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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/926,240 | 09/28/2001 | Heiko Maas | 214090US0PCT | 2525 |

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| EXAMINER |
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KEYS, ROSALYNND ANN

| ART UNIT | PAPER NUMBER |
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1621

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/926,240 | MAAS ET AL. |
| | Examiner | Art Unit |
| | Rosalyn Keys | 1621 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3 and 14-25 is/are pending in the application.
 - 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-3,15-17,20 and 23-25 is/are rejected.
- 7) Claim(s) 14,18,19,21 and 22 is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/4/02.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: ____.

DETAILED ACTION

Status of Claims

1. Claims 1-3 and 14-25 are pending.
Claims 1-3, 15-17, 20, and 23-25 are rejected.
Claims 14, 18, 19, 21, and 22 are objected.
Claims 4-13 are cancelled.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement filed January 4, 2002 has been considered.

Claim Rejections - 35 USC § 112

4. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to

where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 23 recites the broad recitation rhodium salts, and the claim also recites in particular rhodium trichloride, which is the narrower statement of the range/limitation. Also claim 23 recites the broad recitation π -allyl complexes, and the claim also recites in particular bis(π -crotyl)tetrachloro - (butadiene) dirhodium, which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-3, 15-17, 20, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (Preprints-American Chemical Society, Division of Petroleum Chemistry, April 1972, Vol. 17(2), pages B141-B148) in view of GB 1317725 (GB '725) and applicants own admission.

Taylor discloses the use of anhydrous hydrogen chloride as a co-catalyst with rhodium complexes for the reaction of alcohols with diolefins (see entire document , in particular the introduction on page B141, the last paragraph in the section labeled catalyst on page B141; and pages B145-B148 starting with the section labeled Reaction Catalyzed by Rhodium (I) Complexes).

Taylor differs from the instant invention in that Taylor do not disclose use of the specific alcohols having the claimed formulas (I) and (II). However, Taylor does teach that the disclosed mechanism is capable of extension to other systems, which have

been studied, for example, the reaction of diolefins with various nucleophiles, i.e., the reaction of conjugated dienes with reagents containing -OH and -NH groups.

GB'725 teaches reaction of alcohols within the claimed formulas (I) and (II) with 1,3-conjugated dienes in the presence of rhodium compounds (see entire disclosure). The reactants are present in both gaseous and liquid phase. The products produced are useful for making surfactants.

One having ordinary skill in the art at the time the invention was made would have found it obvious to utilize the reactants of GB '725 in the process taught by Taylor, since the process taught by GB '725 involves reaction between conjugated dienes and reagents containing -OH groups and Taylor teaches that his mechanism can be extended to include such reactions.

Taylor in view of GB' 725 fail to teach further adding hydrogen or an organic halide to the reaction medium. However, the applicants admit on page 5, lines 30-45 that the addition of hydrogen gas and/or organic halides is known to have a favorable effect on the reactions of the instant invention.

Allowable Subject Matter

10. Claims 14, 18, 19, 21, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. The following is a statement of reasons for the indication of allowable subject matter: 1) the prior art specifically teaches the use of anhydrous hydrogen fluoride thus, the prior art fails to teach or fairly suggest using hydrogen chloride in the form of

hydrochloric acid ; and 2) the prior art fails to teach or fairly suggest using the compounds having the claimed formulas (I) and (II) when the R groups are any substituent other than hydrogen.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Smutny (Journal of the American Chemical Society, Vol. 89:25, December 1967, pp. 6793-6794) teaches oligomerization and dimerization of butadiene with nucleophiles under homogenous catalysis to produce 1,3,7-octatrienes.

Walker et al. (Tetrahedron Letters, No. 45, 1970, pp. 3817-3820) teach the effects of solvents and ligands on the palladium complex catalyzed reactions of conjugated dienes with acetic acid.

Fakhretdinov et al. (AN 106 :49564 CASREACT abstract of Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, 1985, No. 12, pp. 2763-6) teach the catalytic reaction of palladium π -allyl complexes with allyl O- and N- nucleophiles.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalynd Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M, R and F 3:30-8:30 pm and T-W 5:30-10:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rosalynd Keys
Primary Examiner
Art Unit 1621

September 3, 2004